

Status of the Claims

1. (Currently Amended) A variable valve, comprising:
- 5 a valve body comprising at least one conduit defined therethrough;
- a first cylinder having a first aperture corresponding to each of the at least one conduit, wherein the first cylinder is rotatable within the valve body between a first position and a second position; and
- 10 a second cylinder ~~in direct contact~~ directly coupled with the first cylinder having a second aperture corresponding to each of the at least one conduit, wherein the second cylinder is rotatable within the valve body between the first position and the second position;
- such that the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one conduit when the first cylinder and the second cylinder move from the first position toward the second position;
- 15 wherein each of the single variable sized opening defines openings define a cross section by which a passage through the respective conduit is unrestricted;
- wherein flow through each of the single variable sized openings is
- 20 maximized when the first cylinder and the second cylinder are in the second position; and
- wherein each of the single variable sized openings are in a closed position when the first cylinder and the second cylinder are in the first position.
- 25 2. (Original) The valve of claim 1, wherein the variable valve comprises a process valve.
3. (Original) The valve of claim 1, wherein the variable valve comprises an air valve.
- 30 4. (Original) The valve of claim 1, wherein the variable valve variable flow for any of a gas and a liquid.
5. (Original) The valve of claim 1, wherein the second cylinder moves in cooperation with the first cylinder.
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6. (Original) The valve of claim 5, further comprising a gear assembly, comprising:
a first set of gears coupled to the first cylinder; and
5 a second set of gears coupled to the second cylinder, wherein the first set of gears and the second set of gears are coupled to one another.
7. (Canceled)
- 10 8. (Previously Presented) The valve of claim 1, wherein the first cylinder and the second cylinder are coupled to the valve body and configured in a predetermined position such that the variable sized opening is in communication with the at least one conduit.
- 15 9. (Original) The valve of claim 1, further comprising an axle for driving the first cylinder and the second cylinder, wherein the axle is coupled to the block body.
10. (Original) The valve of claim 1, wherein the first cylinder and the second cylinder move in an opposite direction from one another.
- 20 11. (Original) The valve of claim 1, wherein the first cylinder and the second cylinder move in the same direction with one another.
12. (Original) The valve of claim 1 wherein the first cylinder rotates about an axis.
- 25 13. (Original) The valve of claim 1 wherein the second cylinder rotates about an axis.
- 30 14. (Currently Amended) A variable valve apparatus, comprising:
a body having at least one conduit;
a first cylinder coupled to the body, the first cylinder having a first aperture cut therethrough corresponding to each of the at least one conduit, wherein the first cylinder is rotatable between an open position and a closed position; and

a second cylinder coupled to the body and ~~in direct contact~~ directly coupled with the first cylinder, the second cylinder having a second aperture cut therethrough corresponding to each of the at least one conduit, wherein the second cylinder is configured to rotate between an open position and a closed position;

whereby the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one conduit; and

wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit by which a passage through the at least one conduit is unrestricted;

wherein flow through each of the single variable sized openings is maximized when the first cylinder and the second cylinder are in the open position; and

wherein the first aperture and the second aperture do not form the single opening when the first cylinder and the second cylinder are in the respective closed positions.

15. (Original) The valve apparatus of claim 14, wherein the variable valve comprises a process valve.

16. (Original) The valve apparatus of claim 14, wherein the variable valve comprises an air valve.

17. (Original) The valve apparatus of claim 14, wherein the variable valve provides variable flow for any of a gas and a liquid.

18. (Canceled)

19. (Previously Presented) The valve apparatus of claim 14, wherein the at least one conduit comprises a process passage through the body, the first rotatable cylinder and the second rotatable cylinder, and further wherein the process passage is coupled to the body and configured in a predetermined position such that the at least one conduit is in communication with the process passage.

20. (Original) The valve apparatus of claim 14, further comprising an axle coupled to the body for driving the first rotatable cylinder and the second rotatable cylinder.
- 5 21. (Original) The valve apparatus of claim 14, further comprising a gear assembly comprising:
a first set of gears coupled to the first rotatable cylinder; and
a second set of gears coupled to the second rotatable cylinder, wherein
the first set of gears and the second set of gears are geared to one another.
- 10 22. (Original) The valve apparatus of claim 14, wherein the first rotatable cylinder and the second rotatable cylinder move in an opposite direction from one another.
- 15 23. (Original) The valve apparatus of claim 14, wherein the first rotatable cylinder and the second rotatable cylinder move in a same direction with one another.
- 20 24. (Original) The valve apparatus of claim 14, wherein the first aperture and the second aperture are both semi-circular and together form a circular opening.
25. (Currently Amended) A variable valve apparatus comprising:
a body having at least one passage defined therethrough;
a first cylinder coupled to the body, the first cylinder having a first aperture
25 corresponding to each of the at least one passage and configured to move between a first position and a second position; and
a second cylinder coupled to the body and ~~in direct contact~~ directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one passage and configured to move
30 between the first position and the second position;
such that the first aperture and the second aperture form a single variable sized opening corresponding to each of the at least one passage when the first cylinder and the second cylinder move between the first position and the second position;

such that in the respective first positions, the first aperture and the second aperture define a closed position to cut off flow, and in the respective second positions, the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one passage by which each
5 of the passage through the respective conduit passages is unrestricted, wherein
flow through each of the single variable sized openings is maximized.

26. (Original) The valve apparatus of claim 25, wherein the variable valve comprises a process valve.

27. (Original) The valve apparatus of claim 25, wherein the variable valve comprises an air valve.

28. (Original) The valve apparatus of claim 25, wherein the variable valve provides variable flow for any of a gas and a liquid.

29. (Previously Presented) The valve apparatus of claim 25, wherein the body is configured to allow a maximum amount of flow through the each of the at least one passage when in the second position.

30. (Original) The valve apparatus of claim 25, further comprising an axle for driving the first cylinder and the second cylinder, wherein the axle is coupled to the body.

31. (Original) The valve apparatus of claim 25, further comprising a gear assembly comprising:

a first set of gears coupled to the first cylinder; and

a second set of gears coupled to the second cylinder, wherein the first set of gears and the second set of gears are coupled to one another.

32. (Previously Presented) A valve apparatus of claim 25, wherein the first cylinder and the second cylinder are configured to rotate in cooperation with one another whereby the first aperture and the second aperture form the single variable sized opening between the first position and the second position.

33. (Original) The valve apparatus of claim 25, wherein the first cylinder and the second cylinder rotate in an opposite direction from one another.

5 34. (Original) valve apparatus of claim 25, wherein the first cylinder and the second cylinder move in a same direction with one another.

35. (Currently Amended) A method of assembling a variable valve apparatus having an open position and a closed position, comprising the steps of:

10 providing a body having at least one conduit defined therethrough;
~~wherein the at least one conduit is configured to have an open position and a closed position;~~

15 coupling a first cylinder to the body, the first cylinder having a first aperture corresponding to each of the at least one conduit and configured to be moveable such that the first aperture is in complete communication with the at least one conduit in the open position; and

20 coupling a second cylinder to the body and ~~in direct contact~~ directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one conduit and configured to be moveable such that the second aperture is in complete communication with the at least one conduit in the open position;

25 wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit by which a flow through the respective conduit is unrestricted when the first aperture and the second aperture are in the open position, such that flow through each of the single variable sized openings is maximized; and

wherein the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

30 36. (Original) The method of claim 35, wherein the variable valve apparatus comprises a process valve.

35 37. (Original) The method of claim 35, wherein the variable valve apparatus comprises an air valve.

38. (Original) The method of claim 35, wherein the flow comprises any of a gas and a liquid.

39. (Canceled)

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40. (Original) The method of claim 35, wherein the body includes means for driving the first cylinder and the second cylinder, wherein the means for driving is coupled to the body.

10 41. (Original) The method of claim 35, wherein the body further comprises a gear assembly including:

a first set of gears coupled to the first cylinder; and

a second set of gears coupled to the second cylinder, wherein the first set of gears and the second set of gears are coupled to one another.

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42. (Original) The method of claim 35, wherein the first cylinder and the second cylinder move in an opposite direction from one another.

20 43. (Original) The method of claim 35, wherein the first cylinder and the second cylinder move in a same direction with one another.

44. (Original) The method of claim 35, wherein the first cylinder is rotatably moveable about an axis.

25 45. (Original) The method of claim 35, wherein the second cylinder is rotatably moveable about an axis.

46. (Currently Amended) A valve comprising:

a body;

30 a first means for channeling a flow through the body; and

a second means for channeling the flow through the body;

wherein the first means and the second means are configured to ~~directly contact~~ directly couple one another and to rotatably move in an opposite direction from one another, thereby forming at least one variable sized aperture;

35 and

wherein the first means and the second means define a single variable sized opening for each of the variable sized apertures by which the channeled flow through the body is unrestricted when the first means and the second means are in an open position to maximize flow through each of the single variable sized apertures, and wherein the first means and the second means define a cross section by which the channeled flow through the body is completely closed when the first means and the second means are in a closed position.

47. (Original) The valve of claim 46, wherein the valve comprises a process valve.

48. (Original) The valve of claim 46, wherein the valve comprises an air valve.

49. (Original) The valve of claim 46, wherein the flow comprises any of a gas and a liquid.

50. (Currently Amended) A variable valve comprising:

a first rotatable cylinder having a first aperture, wherein the first rotatable cylinder rotates between a first position and a second position;

a second rotatable cylinder having a second aperture, wherein the second rotatable cylinder ~~directly contacts~~ is directly coupled to the first rotatable cylinder and rotates in cooperation with the first rotatable cylinder such that the first aperture and the second aperture form a at least one single variable sized opening when the first rotatable cylinder rotates from the first position toward the second position;

wherein the first rotatable cylinder and the second rotatable cylinder define a cross section by which a flow through the single variable sized opening is unrestricted when the first rotatable cylinder is in the first second position to maximize flow through each of the single variable sized apertures, and wherein the first rotatable cylinder and the second rotatable cylinder define a cross section by which the flow is closed when the first rotatable cylinder is in the closed first position.

51. (Original) The valve of claim 50, wherein the variable valve comprises a process valve.

52. (Original) The valve of claim 50, wherein the variable valve comprises an air
5 valve.

53. (Original) The valve of claim 50, wherein the flow comprises any of a gas and a liquid.

10 54. (Previously Presented) The valve of claim 50, further comprising a block body including a passage for allowing a process to pass through the block body, the first rotatable cylinder and the second rotatable cylinder, wherein the passage is configured in a predetermined position such that the single variable sized opening is in communication with the passage.

15 55. (Original) The valve of claim 50, further comprising an axle for driving the first rotatable cylinder and the second rotatable cylinder, wherein the axle is coupled to the block body.

20 56. (Original) The valve of claim 50, further comprising a gear assembly comprising:

a first set of gears coupled to the first rotatable cylinder; and

a second set of gears coupled to the second rotatable cylinder, wherein the first set of gears and the second set of gears are coupled to one another.

25 57. (Original) The valve of claim 50, wherein the first rotatable cylinder and the second rotatable cylinder rotate in an opposite direction from one another.

30 58. (Original) The valve of claim 50, wherein the first rotatable cylinder and the second rotatable cylinder rotate in a same direction with one another.

59. (Currently Amended) A variable valve apparatus having an open position and a closed position, comprising:

35 a body having at least one conduit defined therethrough, ~~wherein the at least one conduit is configured to have an open position and a closed position;~~

a first cylinder coupled to the body, the first cylinder having a first aperture corresponding to each of the at least one conduit and configured to be moveable such that the first aperture is in complete communication with the at least one conduit in the open position; and

5 a second cylinder coupled to the body and ~~in direct contact~~ directly coupled with the first cylinder, the second cylinder having a second aperture corresponding to each of the at least one conduit and configured to be moveable such that the second aperture is in complete communication with the at least one conduit in the open position;

10 wherein the first aperture and the second aperture define a single variable sized opening corresponding to each of the at least one conduit in the open position which does not restrict a passage of a flow through the respective conduit, such that flow through each of the single variable sized openings is maximized; and

15 wherein the first aperture and the second aperture are not in communication with the at least one conduit when the first aperture and the second aperture are in the closed position.

20 60. (Original) The apparatus of claim 59, wherein the variable valve comprises a process valve.

61. (Original) The apparatus of claim 59, wherein the variable valve comprises an air valve.

25 62. (Original) The apparatus of claim 59, wherein the flow comprises any of a gas and a liquid.

63. (Canceled)

30 64. (Original) The apparatus of claim 59, wherein the body comprises means for driving the first cylinder and the second cylinder, wherein the means for driving is coupled to the body.

35 65. (Original) The apparatus of claim 59, wherein the body further comprises a gear assembly including:

a first set of gears coupled to the first cylinder; and
a second set of gears coupled to the second cylinder, wherein the first set
of gears and the second set of gears are coupled to one another.

5 66. (Original) The apparatus of claim 59, wherein the first cylinder and the
second cylinder move in an opposite direction from one another.

67. (Original) The apparatus of claim 59, wherein the first rotatable cylinder and
the second rotatable cylinder rotate in a same direction with one another.

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68. (Original) The apparatus of claim 59, wherein the first cylinder is rotatably
moveable about an axis.

69. (Original) The apparatus of claim 59, wherein the second cylinder is
15 rotatably moveable about an axis.